



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,487	08/27/2001	Shlomo Shkolnik	174/02403	8039
26418	7590	11/03/2004	EXAMINER	
REED SMITH, LLP ATTN: PATENT RECORDS DEPARTMENT 599 LEXINGTON AVENUE, 29TH FLOOR NEW YORK, NY 10022-7650			PROCTOR, JASON SCOTT	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,487

Applicant(s)

SHKOLNIK, SHLOMO

Examiner

Jason Proctor

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/9/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

Continuation Sheet (PTOL-326)

Application No.

PTO-1449 Mail Date 11/25/2002

PTO-1449 Mail Date 3/28/2002

DETAILED ACTION

1. Claims 1-52 have been rejected.

Priority

2. Applicant's request for priority to provisional application 60/173,718 filed on December 30, 1999 has been acknowledged.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the network which connects to a plurality or remote processors recited in claim 18 must be shown or the feature(s) canceled from the claim(s). The portable computer recited in claim 19 must be shown or the feature(s) canceled from the claim(s). The aircraft recited in claim 44 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

Art Unit: 2123

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 2, reference 54. It appears that the amendment to the specification at page 10, lines 16-21 has removed the sole explanation of Fig. 2, reference 54 in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 2123

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "40" (Fig. 1) has been used to designate both "CAD" and "Design Tool". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "40A" and "40" (Fig. 1) have both been used to designate "CAD". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. The objectionable material is found on page 3, lines 6-8. Appropriate correction is required.
9. The disclosure is objected to because of the following informalities: Page 18, lines 5-7 relate to "wire codes defined in the above mentioned MIL-W-5088L standard", however the MIL-W-5088L standard is discussed nowhere in the specification. Page 2, lines 32-34 makes reference to "MIL-W-5088". Appropriate correction is required.
10. The attempt to incorporate subject matter into this application by reference to the RAM and WBS descriptions (page 3, lines 6-8) is improper because the referenced document is a browser executable code. See MPEP § 608.01(p)(I)(A). Appropriate correction is required.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1-22 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-16 and 19 recite nonfunctional descriptive material and are therefore nonstatutory. Claims 17, 18, and 20-22 recite

Art Unit: 2123

functional descriptive material not claimed in combination with a tangible embodiment and are therefore nonstatutory.

13. Claims 23-28 and 30-31 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 23-28 and 30-31 recite a method of forming a vehicle design index where the broadest reasonable interpretation of the claims includes a method executed by a human. These claims are not directed to a technology art and therefore nonstatutory.

14. Claims 45-49 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 45-49 recite a method of labeling major elements of an aircraft where the broadest reasonable interpretation of the claims includes a method executed by a human. These claims are not directed to a technology art and therefore nonstatutory.

15. Claims 50-52 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 50-52 recite a method of referencing workers working on an aircraft where the broadest reasonable interpretation of the claims includes a method executed by a human. These claims are not directed to a technology art and therefore nonstatutory.

16. To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. § 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

17. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

18. Claim 44 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 44 recites an aircraft designed using the method of providing information recited in claim 32, however the disclosure provides no enablement for the realization of an aircraft design. Aircraft construction is a technology art unto itself. While Applicant's disclosure is directed toward managing the design process for an aircraft, the disclosure addresses none of the technical issues pertinent to aircraft design. For example, the disclosure addresses none of the issues of airfoil design, structural integrity analysis, or climate control systems except by name from the perspective of project management. For computer-related inventions that involve more than one field of technology, the disclosure must satisfy the enablement standard for each aspect of the invention. See *In re Naquin*, 398 F.2d 863, 866, 158 USPQ 317, (319 CCPA 1968).

19. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2123

20. Claims 1-52 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

21. The term "major element" in claims 1-3, 5-7, 23-26, 32, 33, 38, and 45-47 is a relative term which renders the claim indefinite. The term "major element" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner what constitutes a "major element" of a vehicle. It is unknown how to determine whether a given element of a vehicle is a major element, minor element, or some other distinction such as a primary element, critical element, or optional element. Further, in numerous cases the broadest reasonable interpretation of term "element" would include both "physical component" and "an element of the periodic table of elements" owing to the importance of material of construction in most vehicle applications.

22. Claims 1, 8, 23, 27, and 47 contain the term "substantially" which renders each claim indefinite.

23. Regarding claim 1, the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner what portion of the records of a database must

Art Unit: 2123

be related to "major elements" in order to be "describing substantially only major element".

24. Regarding claim 8, the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner how much of the database may comprise drawings while it "substantially does not comprise drawings". It is unknown how to determine if a database "substantially does not comprise drawings".

25. Regarding claim 23, the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner what portion of the elements of a vehicle constitutes "substantially all major elements of a vehicle". It is unknown how to determine if data has been gathered for "substantially all major elements of a vehicle".

26. Regarding claim 27, the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner what portion of workers constitutes "substantially any of the workers". It is unknown how to determine whether a group of workers of a company constitutes "substantially any of the workers", or if a single worker is "substantially any of the workers".

27. Regarding claim 47, the term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner what portion of the elements of a vehicle constitutes "substantially all major elements of the aircraft". It is unknown how to determine if "substantially all major elements of the aircraft" have been assigned a code.

28. Regarding claim 11, the term "less than 10% of the elements of the vehicle" renders the claim indefinite. The term "elements of the vehicle" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unknown to the examiner how to determine exactly what is meant by an "element of the vehicle", whether this refers to individual components, aggregations of components, entire systems, or some other definition. As a result of this indefinite terminology, it is unknown how to determine whether a given database includes records for "less than 10% of the elements of the vehicle".

29. Regarding claim 12, the term "less than 1% of the elements of a vehicle" renders the claim indefinite for the same reasons given for claim 11 above.

30. Claims 17, 23, and 31 contain the term "automatically" which renders each claim indefinite.

Art Unit: 2123

31. Regarding claim 17, the term "automatically updates" has several interpretations and it is unknown to the examiner which interpretation is intended. For example, the one or more computerized tool could update the database when instructed to do so by a user, automatically handling the communications between the computerized tool and the database. Alternatively, the computerized tool could automatically initiate an update of the database at predetermined intervals.

32. Regarding claims 23 and 31, the term "automatically gathers" has several interpretations and it is unknown to the examiner which interpretation is intended. For example, gathering information from a plurality of computerized tools could be performed automatically by computer printout on paper. Alternatively, gathering information from a plurality of computerized tools could be performed automatically by transferring the information via telecommunications to a second computer. Both interpretations could be performed periodically, as per the limitations of claim 31.

33. The term "comprising input and output information of at least one data evaluation program molded into a form of the database" in claim 20 renders the claim indefinite. It is unknown what is meant by "input and output information molded into a form of the database". It is unknown if an example of prior art where input and output information is inserted into a database using known methods teaches the limitations of this claim. It is unknown if molding information into a form of the database means performing some operation upon data information such that the result can be reasonably interpreted as a database itself or if it means some type of database data insertion technique. It is noted

Art Unit: 2123

that language of the claim is found in the specification at page 5, lines 21-31, however this provides no insight into the intended meaning of the term.

34. The term "running a verification routine which finds design faults, on the database" in claim 41 renders the claim indefinite. The term has several interpretations and it is unknown to the examiner which interpretation is intended. For example, a verification routine could be run on the database to find faults in the design of the database. Alternatively, a verification routine could be run on the data contained within the database to find faults in the design represented by the data.

35. The term "configuration management codes" in claim 50 renders the claim indefinite. It is unknown what is meant by "configuration management codes". It is unknown how to determine if a code assigned to some aspect of an aircraft in prior art constitutes a "configuration management code". It is noted that the term "configuration management codes" is found in the specification at page 7, lines 14-21, however this provides no insight into the intended meaning of the term.

36. Claims not specifically mentioned are rejected by virtue of their dependency.

37. Appropriate correction is required.

Claim Interpretation

38. In the interest of compact prosecution, examiner makes the following claim interpretations in order to apply prior art to the claims. See *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984).
39. Regarding claims 1-3, 5-7, 23-26, 32, 33, 38, and 45-47, the term "major elements" is interpreted as "physical components".
40. Regarding claims 1, 8, 23, 27, and 47, the claim limitations are interpreted without the term "substantially".
41. Regarding claim 9, the term "Gbytes" is interpreted as $2^{30} = 1,073,741,824$ bytes.
42. Regarding claim 10, the term "Mbytes" is interpreted as $2^{20} = 1,048,576$ bytes.
43. Regarding claim 11, the limitations are interpreted as "the database includes records for less than 10% of the physical components of the vehicle."
44. Regarding claim 12, the limitations are interpreted as "the database includes records for less than 1% of the physical components of the vehicle."
45. Regarding claims 17, 23, and 31, the claim limitations are interpreted without the term "automatically".
46. Regarding claim 20, the term "input and output information of at least one data evaluation program molded into a form of the database" is interpreted as "information output from at least one data evaluation program is inserted into the database."

Art Unit: 2123

47. Regarding claim 41, the term "running a verification routine which finds design faults, on the database" is interpreted as "running a verification routine on the data contained within the database to find faults in the design represented by the data."

48. Regarding claim 50, the term "configuration management codes" is interpreted as "identification codes".

Claim Rejections - 35 USC § 102

49. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

50. Claims 23-25 and 31 are rejected under 35 U.S.C. § 102(b) as being anticipated by Jolliffe et al. US Patent No. 5,646,862.

51. Regarding claim 23, Jolliffe et al. teaches a vehicle design index (column 1, lines 6-10; column 2, lines 23-53), comprising:

gathering, from a plurality of computerized tools, information on physical components of a vehicle (column 3, lines 7-20; column 4, lines 10-23); and

storing the information in the index (column 4, lines 24-34).

52. Regarding claim 24, Jolliffe et al. teaches that gathering information comprises gathering location information for the physical components (column 10, lines 1-14).

Art Unit: 2123

53. Regarding claim 25, Jolliffe et al. teaches that gathering information comprises gathering interconnection information of the physical components (column 5, lines 8-21).

54. Regarding claim 31, Jolliffe et al. teaches gathering the information periodically (column 4, lines 28-34).

55. Claims 50-52 are rejected under 35 U.S.C. § 102(b) as being anticipated by Barnewall et al. US Patent No. 5,634,055.

56. Regarding claim 50, Barnewall et al. teaches a method of referencing workers working on an aircraft (column 2, line 64 – column 3, lines 13) comprising:

assigning identification codes to various aspects of the aircraft (column 2, line 64 – column 3, lines 13);

assigning a part number code which includes the assigned configuration management code of the aspect to which the part belongs (column 2, line 64 – column 3, lines 13); and

assigning worker codes which include the identification code of the aspect on which the worker works (column 2, line 64 – column 3, lines 13).

57. Regarding claim 51, Barnewall et al. teaches that the identification codes comprise three digits (Figure 3, reference 21).

58. Regarding claim 52, Barnewall et al. teaches preparing a responsibility matrix which references workers by the assigned worker codes (column 2, line 64 – column 3, lines 24).

Claim Rejections - 35 USC § 103

59. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

60. Claims 1-12, 14-16, and 18-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Benjamin et al. US Patent No. 6,438,535 in view of Wakiyama et al. US Patent No. 5,806,069.

61. Regarding claim 1, Benjamin et al. teaches a database system (column 1, lines 15-21) comprising:

a plurality of records which describe physical components of a system
(column 2, lines 52-59); and
at least one indication of the relative assembly of the physical components
(column 2, line 66 – column 3, line 21).

62. Benjamin et al. does not expressly teach a plurality of references to workers in charge of the physical components or a plurality of references to documents related to the physical components.

63. Benjamin et al. does teach records in the database which contain links to additional data unique to a particular assembly (column 2, lines 60-65). Wakiyama et al. teaches "product manufacturing information" which includes "information necessary to manufacture the intermediate and end products" (column 14, lines 40-54). Wakiyama

Art Unit: 2123

et al. also teaches defining a relationship related to the location of an in-house process (column 21, lines 34-55). Wakiyama et al. also teaches an object model (Figure 8; column 18, line 54 – column 19, line 49) which includes references to “graphic names” and “data file names” (Figure 8, reference CL7).

64. It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to take the teachings of Benjamin et al. in view of Wakiyama et al. in combination with his own knowledge of the particular art to further specify “product manufacturing information” as a plurality of references to workers in charge of the physical components and a plurality of references to documents related to the physical components. Doing so would produce a higher level of detail in the system documentation. The combination could be achieved by incorporating the “product manufacturing information” of Wakiyama et al. into the “assembly specific data tables” of Benjamin et al. (column 3, lines 22-45).

65. Regarding claim 2, Benjamin et al. teaches records which comprise physical components which interact with other components (column 2, line 66 – column 3, line 45).

66. Regarding claim 3, Benjamin et al. teaches records which comprise physical components which are functionally related to other components (column 2, line 66 – column 3, line 45).

67. Regarding claims 4-6, neither Benjamin et al. nor Wakiyama et al. expressly disclose records which comprise coordinates, an access door, or a compartment as an indication of location. However, Benjamin et al. does teach that the parts are assigned

Art Unit: 2123

pre-defined locations in the final assembly (column 3, lines 22-45). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the teachings of Benjamin et al. in view of Wakiyama et al. in combination with his own knowledge of the particular art to further specify "pre-defined locations within the final assembly" as corresponding to coordinates, an access door, or a compartment in which the part is located to meet the intended use of the finished invention. The combination could have been accomplished by appropriately changing the data type of the pre-defined location in the relational database of Benjamin et al.

68. Regarding claim 7, Benjamin et al. teaches records which comprise an indication of the physical components with which a component interacts (column 2, line 66 – column 3, line 45).

69. Regarding claim 8, Benjamin et al. teaches a database that comprises drawings (Column 22, "TABLE XXXIII"), however omission of an element and its function is obvious if the function or element is not desired. Applicant admits that a feature of the instant invention is the omission of drawings and diagrams which require large amounts of storage and of little interest to workers not in the department in charge of the element described by the drawings (page 3, lines 10-17). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to omit the drawings and their function, as neither is desired. See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

70. Regarding claims 9 and 10, neither Benjamin et al. nor Wakiyama et al. disclose a database that requires less than 1Gbytes or 100Mbytes of storage space. In *Gardner*

Art Unit: 2123

v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Further, see *In re Lindberg*, 194 F.2d 732, 93 USPQ 23 (CCPA 1952), where it was held that making an invention of prior art portable does not distinguish it as patentably distinct over the prior art.

71. Regarding claims 11 and 12, neither Benjamin et al. nor Wakiyama et al. expressly disclose a database including records for less than 10% or less than 1% of the components of a vehicle. However, as these claims are directed toward reducing the storage size of the database (page 3, lines 10-17; page 5, lines 16-20), they are therefore unpatentable over the prior art for the same reasons given for claims 9 and 10 above.

72. Regarding claim 14, Benjamin et al. teaches references to documents that contain diagrams including the components (Figures 6, 7; column 22, "TABLE XXXIII").

73. Regarding claim 15, neither Benjamin et al. nor Wakiyama et al. expressly disclose references to documents comprising procurement invoices. However, Wakiyama et al. does teach references to "production-related information" which comprises, among other data, the suppliers of each part, the purchase price of each part, and the selling price of each part (column 3, lines 39-51). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to take

Art Unit: 2123

the teachings of Benjamin et al. in view of Wakiyama et al. in combination with his own knowledge of the particular art to interpret "production-related information" as "procurement invoices" and incorporate these documents into the combined invention of Benjamin et al. in view of Wakiyama et al. in order to keep more detailed documentation of the system and manufacture. The combination could be achieved by referencing the appropriate documents in the "assembly specific data tables" of Benjamin et al. (column 3, lines 22-45).

74. Regarding claim 16, Benjamin et al. teaches that the components are identified by a unique code which is assigned according to a functionality of the component (column 3, lines 22-45).

75. Regarding claim 18, Benjamin et al. does not expressly teach a network of remote processors. However, Wakiyama et al. teaches a system wherein a database is accessible over a network which connects a plurality of remote processors (column 16, lines 24-29). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to incorporate the network system of Wakiyama et al. into the database system of Benjamin et al. in order to achieve a flexible system where many users can share a single database. The combination could be achieved by using the architecture shown in Wakiyama et al. (Figure 1; column 16, lines 24-29).

76. Regarding claim 19, Benjamin et al. does not expressly teach a portable computer. Wakiyama et al. does not expressly teach a portable computer, however the system taught, including a liquid crystal display (column 15, lines 46-65) together with several methods to decrease the storage size of the database (column 3, lines 6-14;

Art Unit: 2123

column 3, lines 27-39) give sufficient suggestion that using a portable computer would have been obvious to a person of ordinary skill in the art at the time of applicant's invention. The combination could be achieved by using the architecture shown in Wakiyama et al. (column 15, lines 46-65).

77. Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Benjamin et al. in view of Wakiyama et al. as applied to claim 1 above, and further in view of Barker et al. US Patent No. 6,314,422.

78. Regarding claim 13, neither Benjamin et al. nor Wakiyama et al. expressly disclose using a hyperlink to reference a document.

79. Barker et al. teaches linking between information relating to vehicle wiring, parts, and manuals using hyperlinks (column 3, line 39 – column 4, line 9; column 7, line 27-42). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the document linking mechanism of Barker et al. with the database system of Benjamin et al. in view of Wakiyama et al. in order to make use of commercial, off-the-shelf technology when providing information relating to the system under design. The combination could be achieved by storing the relevant linking information in the "assembly specific data tables" of Benjamin et al. (column 3, lines 22-45).

Art Unit: 2123

80. Claims 17 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Benjamin et al. in view of Wakiyama et al. as applied to claim 1 above, and further in view of Jolliffe et al.

81. Regarding claim 17, neither Benjamin et al. nor Wakiyama et al. expressly disclose that the database is associated with a computerized which updates the database.

82. Jolliffe et al. discloses a vehicle design system where various computerized tools update a central database (Figure 1; column 2, lines 23-40). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to use computerized methods to update a database in order to produce an accurate documentation system. The combination could be achieved by combining the updating functionality of Jolliffe et al. with the combined database system of Benjamin et al. in view of Wakiyama et al. so that changes to the records in the database could be performed through the computerized tools.

83. Regarding claim 20, neither Benjamin et al. nor Wakiyama et al. expressly teach inserting information output from at least one data evaluation program into the database.

84. Jolliffe et al. discloses a vehicle design system where various computerized tools insert information into a database (Figure 1; column 2, lines 23-40). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to use computerized methods to update a database in order to produce an accurate documentation system. The combination could be achieved by combining the updating

Art Unit: 2123

functionality of Jolliffe et al. with the combined database system of Benjamin et al. in view of Wakiyama et al. so that changes to the records in the database could be performed through the computerized tools.

85. Regarding claims 21 and 22, both design-to-cost programs and design-for-manufacture-and-assembly programs are known in the art (See "Teamset – a Concurrent Engineering Business Solution, the Manufacturing Toolset that Makes Teamwork a Reality", CSC, 1996). Further, Benjamin et al. teaches the application of error prevention and detection on the data stored in the database (column 3, lines 46-62). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to use design programs known in the art combined with the error prevention and detection steps of Benjamin et al. to arrive at applicant's claimed invention.

69. Claims 26, 27, and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jolliffe et al. as applied to claim 23 above, and further in view of Barker et al.

86. Regarding claim 26, Jolliffe et al. does not disclose gathering references to documents describing the physical components.

87. 68. Barker et al. teaches linking between information relating to vehicle wiring, parts, and manuals using hyperlinks (column 3, line 39 – column 4, line 9; column 7, line 27-42). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the document linking mechanism of Barker et al. with

Art Unit: 2123

the vehicle design index of Jolliffe et al. in order to make use of commercial, off-the-shelf technology when providing information relating to the system under design. The combination could be achieved by storing the link in the database of Jolliffe et al. (column 2, lines 36-40) and delivering it to the user when translating data to and from the database (column 5, line 56 – column 6, line 3).

88. Regarding claim 27, neither Jolliffe et al. nor Barker et al. expressly disclose that at least one group of workers are restricted from viewing at least some information and wherein gathering information comprises gathering information which is not restricted from viewing by any of the workers of the company. However, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention in combination with his own knowledge of the particular art to design a vehicle design index comprising information which is not restricted from viewing by any of the workers of the company. A vehicle design index which provides no means of restricting access to information yet contains information which is restricted from viewing by some workers would undermine the restricted nature of the information, therefore it would have been obvious to gather only the information which is not restricted from viewing by any of the workers.

89. Regarding claim 29, Jolliffe et al. teaches storing the information in a database (abstract).

Art Unit: 2123

90. Claim 28 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Jolliffe et al. in view of Barker et al. as applied to claim 26 above, and further in view of Bly et al. US Patent No. 5,008,853.

91. Regarding claim 28, neither Jolliffe et al. nor Barker et al. expressly disclose gathering information from tools which carry information restricted from viewing by at least on group of workers within the company designing the vehicle.

92. Bly et al. teaches a multi-user collaborative system where at least some information is restricted from viewing by at least one group of workers (abstract). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to include the access restriction feature of Bly et al. when designing a vehicle design index to facilitate the inclusion of information restricted from viewing by at least one group of workers by embracing the viewing restrictions within the vehicle design index itself. The combination could be achieved by means of user authentication and providing requested information only when the authenticated user is not restricted from viewing the requested information.

93. Claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Jolliffe et al. as applied to claim 23 above.

94. Regarding claim 30, while Jolliffe et al. does not expressly disclose gathering information on physical components of an aircraft, Jolliffe et al. does teach gathering information on physical components of a vehicle (column 2, lines 23-40). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention in

Art Unit: 2123

combination with his own knowledge of the particular art to use the invention of Jolliffe et al. for the intended use of aircraft design.

95. Claims 32-44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jolliffe et al. in view of Benjamin et al. and further in view of Wakiyama et al.

96. Regarding claim 32, Jolliffe et al. teaches a method of providing information between workers designing a vehicle (claim 2, lines 23-53) comprising:

storing the gathered information in a database (column 2, lines 23-53);

and

searching the database for information on one of more of the physical components (column 2, lines 23-53).

97. Jolliffe et al. does not expressly teach gathering information regarding the physical components including a plurality of different indications of the relative assembly of the component and a plurality of references to workers in charge of the component.

98. Benjamin et al. teaches gathering information including a plurality of different indications of the relative assembly of the components (column 3, lines 21-45).

99. It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to take the teachings of Jolliffe et al. in combination with Benjamin et al. in order to store and provide information including a plurality of indications of the relative assembly of the physical components in order to provide a higher level of detail in the information stored and provided to workers. The combination could be achieved

Art Unit: 2123

by storing the additional data in the database necessary to indicate the relative assembly of the component.

100. Wakiyama et al. teaches "product manufacturing information" which includes "information necessary to manufacture the intermediate and end products" (column 14, lines 40-54). Wakiyama et al. also teaches defining a relationship related to the location of an in-house process (column 21, lines 34-55).

101. It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to take the teachings of Jolliffe et al. in view of Benjamin et al. in combination with Wakiyama et al. to further specify "product manufacturing information" as a plurality of references to workers in charge of the physical components in order to provide a higher level of detail in the information stored and provided to workers. The combination could be achieved by storing the additional data in the database necessary to indicate which workers are in charge of the component.

102. Regarding claim 33, Jolliffe et al. does not disclose gathering references to documents related to the physical components, however Benjamin et al. does teach gathering references to documents related to the physical components (column 22, "TABLE XXXIII"). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to take the teachings of Jolliffe et al. in combination with Benjamin et al. in order to store references to documents related to the physical components in order to provide a higher level of detail in the information stored and provided to workers. The combination could be achieved by storing the additional data in the database necessary to indicate the documents related the component.

Art Unit: 2123

103. Regarding claim 34, Benjamin et al. teaches that the plurality of different indications of the relative assembly of the element comprises at least one indication of the location of the element (column 3, lines 20-45). The combination is the same as that used to reject claim 32.

104. Regarding claims 35-37, none of Jolliffe et al., Benjamin et al., or Wakiyama et al. expressly discloses storing at least one indication of the location of a component which comprises coordinates, an access door, or a compartment. However, Benjamin et al. does teach that the parts are assigned pre-defined locations in the final assembly (column 3, lines 22-45). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the teachings of Benjamin et al. in combination with his own knowledge of the particular art to further specify "pre-defined locations within the final assembly" as corresponding to coordinates, an access door, or a compartment in which the part is located to meet the intended use of the finished invention. The combination could have been accomplished by appropriately changing the data type of the pre-defined location in the database of Jolliffe et al.

105. Regarding claim 38, Jolliffe et al. teaches gathering information related to physical components to which the component is connected (column 5, lines 8-21). The combination is the same as that used to reject claim 32.

106. Regarding claims 39 and 40, Jolliffe et al. teaches gathering information related to the system to which the physical component belongs as well as the function which the physical component performs (column 5, lines 8-21).

Art Unit: 2123

107. Regarding claims 41-42, Benjamin et al. teaches running a verification routine on the data contained within the database to find faults in the design represented by the data (column 3, lines 46-62). Benjamin also teaches assigning the components a pre-defined location within the final assembly (column 3, lines 20-45). It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the verification routines taught by Benjamin et al. with the method of providing information of Jolliffe et al. in order to report data analyses and detect errors. The combination could be achieved by including the verification routines as a step in updating the database.

108. Regarding claim 43, Jolliffe et al. does not expressly disclose whether the database contains diagrams or drawings, however the omission of an element and its function is obvious if the function or element is not desired. Applicant admits that a feature of the instant invention is the omission of drawings and diagrams which require large amounts of storage and of little interest to workers not in the department in charge of the element described by the drawings (page 3, lines 10-17). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to omit the drawings and their function, as neither is desired. See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

109. Regarding claim 44, none of Jolliffe et al., Benjamin et al., or Wakiyama et al. expressly discloses an aircraft designed using the method of providing information of claim 32. However, the Northrop YB-49, serial number 42-102367, was first flown on October 21, 1947 (See National Museum of the United States Air Force) and post-dates

Art Unit: 2123

the patent application for the Electrical Numerical Integrator And Computer (ENIAC), US Patent No. 3,120,606. While it is not expressly disclosed whether the YB-49 was designed using a method of providing information using a computerized database as per claim 32, the YB-47 is substantially identical to an aircraft that could have been designed using the method of providing information of claim 32 and therefore teaches the limitations of claim 44.

110. Claims 45-49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Benjamin et al. in view of Cornett et al. US Patent No. 5,216,612.

111. Regarding claims 45 and 46, Benjamin et al. teaches a method of labeling physical components of an aircraft (column 24, lines 14-19), comprising determining a system to which each component belongs (column 3, lines 20-45).

112. Benjamin et al. does not expressly disclose assigning each of the components a code which is unique to each occurrence of the component in the aircraft, responsive to the system in which the component belongs.

113. Cornett et al. teaches a computer integrated maintenance system which includes a listing of parts in a plurality of machines (column 3, lines 20-33). Cornett et al. teaches assigning a plurality of codes to a given part (column 5, lines 24-46).

114. It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to combine the plurality of codes for a given part as taught by Cornett et al. with the labeling method of Benjamin et al. to produce a labeling method that depicts a higher level of information regarding the component being labeled. The

Art Unit: 2123

combination could be achieved by using the labeling method of Cornett et al. to assign identifiers to components within the invention of Benjamin et al. according to a component's membership in a system.

115. The limitations of claim 46 are rejected for the same reasons given for the rejection of claim 45.

116. Regarding claim 47, Cornett et al. teaches assigning a code having at least three digits in common with digits of a part number for the component (Figure 26, "01B11", "01B13", "01B14", etc.) The combination is the same as that used to reject claim 45.

117. Regarding claim 48, Cornett et al. teaches assigning a plurality of codes to at least one single element (column 5, lines 24-46). The combination is the same as that used to reject claim 45.

118. Regarding claim 49, Jolliffe et al. teaches codes which represent connections end of the components (column 3, lines 1-45).

Conclusion

Art considered pertinent by the examiner but not applied has been cited on form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (703) 305-0542 or (571) 272-3713 beginning in October 2004. The examiner can normally be reached on 8am-4pm M-F.

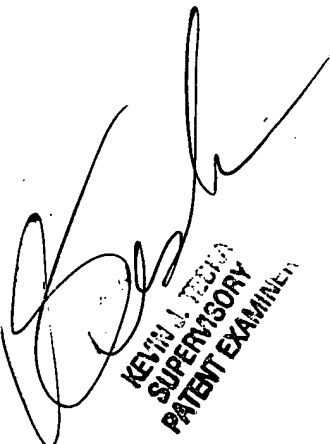
Art Unit: 2123

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (703) 305-9704 or (571) 272-3716 beginning in October 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
Art Unit 2123

jsp



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER